

## **FLEXIBLE WALL MATERIAL FOR USE IN AN INFLATABLE STRUCTURE**

### **Abstract:**

This invention relates to airships, with a volume in 15 to 60 million cubic feet of Helium. More particularly, it relates to improved structural envelope/gas bags or outer covers for lighter-than-air and neutral buoyancy airships. In detail, the material is a multi-layer cloth assembly including at least two plies of fiber cloth, said cloth comprising 56 by 56 yarns/inch with a total weight of 150 to 450 g/m<sup>2</sup>, with the fiber of the individual cloth layers having a denier generally between 180 and 280 and with the fill of the individual plies at 90 degrees to each other. Preferably, the filaments should be between 200 and 215 denier.

The fibers of each layer of cloth are selected from the group consisting of extended chain polyethylene polymer or a thermotropic liquid (melt spun) crystalline polymer.

The extended chain polyethylene fiber is a woven modified rip stop weave architecture, while the thermotropic liquid (melt spun) crystalline polymer fiber is a 2x2 basket weave architecture.

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